

IN THE CLAIMS:

The claims have not been amended, and are set forth here in full for the Examiner's convenience.

1. (Previously Presented) A printing system including an information processing apparatus which outputs print data and a printing apparatus which receives the print data from said information processing apparatus and prints a color image on a sheet,

wherein said information processing apparatus comprises:

a storage unit configured to store a plurality of tables for defining a set of dither matrix patterns used for character/line image and halftone image for each color component;

a designation unit configured to designate a table among the plurality of tables;

a generation unit configured to generate image data for respective printing color components of an image based on data to be print-outputted delivered from higher processing and quantizing the generated image data for respective printing color components using dither matrixes specified by the table designated by said designation unit;

a coding unit configured to compress-encode the quantized image data for the respective printing color components generated by said generation unit;

a notification unit configured to predict coded data amounts for the respective printing color components based on the table designated by said designation unit and the sizes of halftone image areas and character/line image areas included in the

respective printing color components, generating memory allocation ratio information based on a ratio of the predicted coded data amounts for the respective printing color components coded by said coding unit and notifying said printing apparatus of the memory allocation ratio information so that said printing apparatus allocates memory areas for respective color components; and

an output unit configured to, after said notification unit notifies said printing apparatus of the memory allocation ratio information, output the coded image data of the respective printing color components coded by said coding unit to said printing apparatus,

and wherein said printing apparatus comprises:

a reception buffer;

a memory allocation unit configured to receive the memory allocation information notified by said notification unit and allocating, in accordance with the received memory allocation ratio information, memory areas for respective color components in the reception buffer so that the memory sizes of each memory areas correspond to ratios of the predicted coded data amounts for the respective printing color components;

a receiving unit configured to, after said memory allocation unit allocates memory areas, receive coded image data for respective color components and storing the received coded image data of respective color components into respective allocated memory areas;

plural decoding units, independently provided for the respective printing color components, configured to decode coded data stored in the memory areas to image data; and

a printing unit configured to print the image data for respective color components decoded by said plural decoding units on a sheet.

2. (Original) The printing system according to claim 1, wherein respective areas of said reception buffer allocated for the respective printing color components are utilized as a ring buffer.

3. to 5. (Cancelled)

6. (Previously Presented) A printing system including an information processing apparatus which outputs print data and a printing apparatus which receives the print data from said information processing apparatus and prints a color image on a sheet,

wherein said information processing apparatus comprises:

a storage unit configured to store a plurality of tables for defining a set of dither matrix patterns used for character/line image and halftone image for each color component;

a designation unit configured to designate a table among the plurality of tables;

a generation unit configured to generate image data for respective printing color components of an image based on data to be print-outputted delivered from higher processing and quantizing the generated image data for respective printing color components using dither matrixes specified by the table designated by said designation unit;

a coding unit configured to compress-encode the quantized image data for the respective printing color components generated by said generation unit;

a notification unit configured to calculate code data amounts for the respective printing color components by counting data amounts of the quantized halftone image areas and character/line image areas for the respective printing color components in accordance with the table designated by said designation unit, generating memory allocation ratio information based on a ratio of the calculated coded data amounts for the respective printing color components and notifying said printing apparatus of the memory allocation ratio information so that said printing apparatus allocates memory area for respective color components; and

an output configured to, after said notification unit notifies said printing apparatus of the memory allocation ratio information, output the coded image data of the respective printing color components coded by said coding unit to said printing apparatus,

and wherein said printing apparatus comprises:

a reception buffer;

a memory allocation unit configured to receive the memory allocation information notified by said notification unit and allocating, in accordance with the received memory allocation ratio information, memory areas for respective color components in the reception buffer so that the memory sizes of each memory areas correspond to ratios of the predicted coded data amounts for the respective printing color components;

a receiving unit configured to, after said memory allocation unit allocates memory areas, receive coded image data for respective color components and storing the

received coded image data of respective color components into respective allocated memory areas;

plural decoding units, independently provided for the respective printing color components, configured to decode coded data stored in the memory areas to image data; and

a printing unit configured to print the image data for respective color components decoded by said plural decoding units on a sheet.

7. (Previously Presented) The printing system according to claim 6, wherein said information processing apparatus further comprises:

a request unit configured to request status information of said reception buffer to said printing apparatus;

a determination unit configured to determine whether or not next page compressed data for the respective printing color components can be stored in available areas of the reception buffer for the respective printing color components, based on the status information obtained by said request unit; and

a control unit configured to, if said determination unit determine that the next page compressed data can be stored, delete the memory allocation ratio information to be notified by said notification unit and causing said output unit to output the next page of compressed data.

8. (Previously Presented) An information processing apparatus, which is connectable to a printing apparatus in which sizes of reception buffer memory allocated for

respective color components are changed in accordance with external instruction information, and which outputs print data to said printing apparatus, comprising:

- a storage unit configured to store a plurality of tables for defining a set of dither matrix patterns used for character/line image and halftone image for each color component;

- a designation unit configured to designate a table among the plurality of tables;

- a generation unit configured to generate image data for respective printing color components of an image based on data to be print-outputted delivered from higher processing and quantizing the generated image data for respective printing color components using dither matrixes specified by the table designated by said designation unit;

- a coding unit configured to compress-encode the quantized image data for the respective printing color components generated by said generation unit;

- a notification unit configured to predict coded data amounts for the respective printing color components based on the table designated by said designation unit and the sizes of halftone image areas and character/line image areas included in the respective printing color components, generating memory allocation ratio information based on a ratio of the predicted coded data amounts for the respective printing color components coded by said coding unit and notifying said printing apparatus of the memory allocation ratio information so that said printing apparatus allocates memory areas for respective color components; and

an output unit configured to, after said notification unit notifies said printing apparatus of the memory allocation ratio information, output the coded image data of the respective printing color components coded by said coding unit to said printing apparatus.

9. to 11. (Cancelled)

12. (Previously Presented) An information processing apparatus, which is connectable to a printing apparatus in which sizes of reception buffer memory allocated for respective color components are changed in accordance with external instruction information, and which outputs print data to said printing apparatus, comprising:

a storage unit configured to store a plurality of tables for defining a set of dither matrix patterns used for character/line image and halftone image for each color component;

a designation unit configured to designate a table among the plurality of tables;

a generation unit configured to generate image data for respective printing color components of an image based on data to be print-outputted delivered from higher processing and quantizing the generated image data for respective printing color components using dither matrixes specified by the table designated by said designation unit;

a coding unit configured to compress-encode the quantized image data for the respective printing color components generated by said generation unit;

a notification unit configured to calculate code data amounts for the respective printing color components by counting data amounts of the quantized halftone image areas and character/line image areas for the respective printing color components in accordance with the table designated by said designation unit, generating memory allocation ratio information based on a ratio of the calculated coded data amounts for the respective printing color components and said printing apparatus of notifying the memory allocation ratio information so that said printing apparatus allocates memory area for respective color components; and

an output unit configured to, after said notification unit notifies said printing apparatus of the memory allocation ratio information, output the coded image data for the respective printing color components coded by said coding unit to said printing apparatus.

13. (Previously Presented) The information processing apparatus according to claim 12, further comprising:

a request unit configured to request status information of said reception buffer to said printing apparatus;

a determination unit configured to determine whether or not next page compressed data for the respective printing color components can be stored in available areas of the reception buffer for the respective printing color components, based on the status information obtained by said request unit; and

a control unit configured to, if said determination unit determine that the next page compressed data can be stored, delete the memory allocation ratio information to



be notified by said notification unit and causing said output unit to output the next page of compressed data.

14. (Previously Presented) A control method for an information processing apparatus, which is connectable to a printing apparatus in which sizes of reception buffer memory allocated for respective color components are changed in accordance with external instruction information, and which outputs print data to the printing apparatus, said method comprising:

- a storing step of storing a plurality of tables for defining a set of dither matrix patterns used for character/line image and halftone image for each color component;

- a designation step of designating a table among the plurality of tables;

- a generation step of generating image data for respective printing color components of an image based on data to be print-outputted delivered from higher processing and quantizing the generated image data for respective printing color components using dither matrixes specified by the table designated in said designation step;

- a coding step of compress-encoding the quantized image data for the respective printing color components generated in said generation step;

- a notification step of predicting coded data amounts for the respective printing color components based on the table designated in said designation step and the sizes of halftone image areas and character/line image areas included in the respective printing color components, generating memory allocation ratio information based on a ratio of the predicted coded data amounts for the respective printing color components coded in

said coding step and notifying the printing apparatus of the memory allocation ratio information so that said printing apparatus allocates memory area for respective color components; and

an output step for, after said notification step notifies said printing apparatus of the memory allocation ratio information, outputting the coded image data for the respective printing color components coded in said coding step to the printing apparatus.

15. (Cancelled)

16. (Previously Presented) A computer-readable medium that stores a computer program for causing a computer to implement the method recited in claim 14.